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10/728,084	12/03/2003	Pentti Juhani Eromaki	4447-67437-01	7665
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SUITE 1600 PORTLAND, OR 97204			ART UNIT	PAPER NUMBER
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SHORTENED STATUTORY	PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE	
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Please find below and/or attached an Office communication concerning this application or proceeding.

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	Application No.	Applicant(s)				
Office Action Comments	10/728,084	EROMAKI, PENTTI JUHANI				
Office Action Summary	Examiner	Art Unit				
	Steven D. Maki	1733				
The MAILING DATE of this communication app Period for Reply	pears on the cover sheet with the c	correspondence address				
A SHORTENED STATUTORY PERIOD FOR REPL WHICHEVER IS LONGER, FROM THE MAILING D.  - Extensions of time may be available under the provisions of 37 CFR 1.1 after SIX (6) MONTHS from the mailing date of this communication.  - If NO period for reply is specified above, the maximum statutory period - Failure to reply within the set or extended period for reply will, by statute Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICATION 36(a). In no event, however, may a reply be tin will apply and will expire SIX (6) MONTHS from e, cause the application to become ABANDONE	N. nely filed the mailing date of this communication. D (35 U.S.C. § 133).				
Status						
1)⊠ Responsive to communication(s) filed on <u>29 January 2007</u> .						
) This action is <b>FINAL</b> . 2b) This action is non-final.						
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is						
closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.						
Disposition of Claims						
4) Claim(s) <u>1-42</u> is/are pending in the application.						
4a) Of the above claim(s) is/are withdrawn from consideration.						
5) Claim(s) is/are allowed.						
6) Claim(s) <u>1-42</u> is/are rejected.						
7) Claim(s) is/are objected to.						
8) Claim(s) are subject to restriction and/o	or election requirement.	•				
Application Papers		·				
9) The specification is objected to by the Examiner.						
10)☐ The drawing(s) filed on is/are: a)☐ accepted or b)☐ objected to by the Examiner.						
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).						
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).						
11) The oath or declaration is objected to by the Ex	xaminer. Note the attached Office	Action or form PTO-152.				
Priority under 35 U.S.C. § 119						
12) Acknowledgment is made of a claim for foreign a) All b) Some * c) None of: 1. Certified copies of the priority document		)-(d) or (f).				
<ul> <li>1. Certified copies of the priority documents have been received.</li> <li>2. Certified copies of the priority documents have been received in Application No</li> </ul>						
3. Copies of the certified copies of the priority documents have been received in this National Stage						
application from the International Bureau (PCT Rule 17.2(a)).						
* See the attached detailed Office action for a list of the certified copies not received.						
·		•				
		•				
Attachment(s)						
1) Notice of References Cited (PTO-892)	4) Interview Summary					
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948) 3)  Information Disclosure Statement(s) (PTO/SB/08)	Paper No(s)/Mail Da 5) Notice of Informal F					
Paper No(s)/Mail Date	6) Other:	* F				

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1) A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1-29-07 has been entered.

- The following is a quotation of the second paragraph of 35 U.S.C. 112:
  The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
- 3) Claims 20, 40 and 41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 20 (dependent on claim 16), there is no antecedent basis for "said first side portions". Claim 16 was amended to recite "at least two side portions" instead of "at least two first side portions".

In claims 40 and 41, there is no antecedent basis for "said hole diameter".

Claims 40 and 41 depend on claims describing recesses instead of holes.

- 4) The following is a quotation of the first paragraph of 35 U.S.C. 112:

  The specification shall contain a written description of the invention, and of the manner and
  - The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
- 5) Claims 1-42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

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one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claims 1, 16, 38 and 39, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the **new matter**) is the subject matter of the jaw fingers each comprising a base portion and a tip portion with the base portions defining a stud receiving area there between and the tip portions defining a stud orienting area there between, the stud being oriented in any of a plurality of orientations when positioned within the stud receiving area, and as the stud penetrates the stud orienting area, the tip portions of the jaw fingers orient the stud from one of the plurality of orientations into the predetermined stud orientation.

There is no explicit support for the above noted subject mater in the original disclosure. Moreover, there is insufficient information in the original disclosure to conclude that the anti-slip stud has any one of a plurality of orientations (e.g. vertical orientation, horizontal orientation) in the "stud receiving area" and that the orientation of the stud changes during penetration of the "stud orientating area" from the any one of the plurality of orientations to the predetermined stud orientation.

The original disclosure describes feeding an anti-slip stud 20 by means of a plunger (page 19). Figures 16A-16D illustrate the stud being fed from a location above the top point 15 of the jaw fingers 3, 4, 5, 6 (figure 16A) to a location in the hole in the tread (figure 16D). This feeding arrangement shown in figures 16A to 16D of the

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original disclosure is substantially the same as that shown in figures 3-5 of Petterson. In figures 3-5, Petterson shows guiding the plunger 22 and a stud using a sleeve 25. However, the original disclosure fails to illustrate and/or describe what tool structure is used to feed the stud to the location illustrated in figure 16A. The original disclosure also fails to illustrate and/or describe what tool structure is used to guide the plunger 11 shown in figures 16A and 16D. Since the specification is silent as to tool structure used to feed the studs to the fingers and/or guide the plunger, it would be speculation to conclude that the orientation of the stud changes during penetration of the "stud orientating area" from the any one of the plurality of orientations to the predetermined stud orientation.

It is acknowledged that the original disclosure describes installing studs in a tire tread such that they are in a predetermined stud orientation. However, the original disclosure teaches obtaining this result either by rotating the fingers of the installation tool or using studs having different cermet piece orientations <u>instead of</u> by changing the orientation of the stud during penetration of the stud into the stud orientating area from the any one of the plurality of orientations to the predetermined stud orientation.

6) Claims 1-42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

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In claims 1, 16, 38 and 39, the subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention (i.e. **the non-enabled subject matter**) is the subject matter of the jaw fingers each comprising a base portion and a tip portion with the base portions defining a stud receiving area there between and the tip portions defining a stud orienting area there between, the stud being oriented in any of a plurality of orientations when positioned within the stud receiving area, and as the stud penetrates the stud orienting area, the tip portions of the jaw fingers orient the stud from one of the plurality of orientations into the predetermined stud orientation.

The original disclosure describes feeding an anti-slip stud 20 by means of a plunger (page 19). Figures 16A-16D illustrate the stud being fed from a location above the top point 15 of the jaw fingers 3, 4, 5, 6 (figure 16A) to a location in the hole in the tread (figure 16D). This feeding arrangement shown in figures 16A to 16D of the original disclosure is substantially the same as that shown in figures 3-5 of Petterson. In figures 3-5, Petterson shows guiding the plunger 22 and a stud using a sleeve 25. However, the original disclosure fails to illustrate and/or describe what tool structure is used to feed the stud to the location illustrated in figure 16A. The original disclosure also fails to illustrate and/or describe what tool structure is used to guide the plunger 11 shown in figures 16A and 16D. Since the specification is silent as to tool structure used to feed the studs to the fingers and/or guide the plunger, the specification fails to teach

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how the orientation of the stud changes during penetration of the "stud orientating area" from the any one of the plurality of orientations to the predetermined stud orientation. It is acknowledged that the original disclosure describes installing studs in a tire tread such that they are in a predetermined stud orientation. However, the original disclosure teaches obtaining this result either by rotating the fingers of the installation tool or using studs having different cermet piece orientations instead of by changing the orientation of the stud during penetration of the stud into the stud orientating area from the any one of the plurality of orientations to the predetermined stud orientation. The original disclosure fails to provide any guidance to enable one of ordinary skill in the art as to the tool structure(s) required for changing the orientation of the stud during penetration of the stud into the stud orientating area from the any one of the plurality of orientations to the predetermined stud orientation. It is emphasized that the original disclosure provides insufficient information and illustration of the means used in addition to the fingers and plunger to create the stud receiving and orientating areas which function as claimed. It is noted that Figures 16A-16D fail to show any change in orientation of the stud as it is inserted into the recess.

- 7) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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8) Claims 1-6, 8-22 and 30-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettersson (US 3,385,742) in view of at least one of Ostrovskis (US 2002/0050312) and Russia (RU 2,152,318).

Pettersson discloses a method for making a studded tire comprising: providing a motor vehicle tire 10 (pneumatic tire) having a tread; forming holes 11 in the tread; providing studs wherein each stud comprises a bottom flange 13, a neck 15, a bowl 15 and a tip 16 (figure 1); providing an installation tool having "a number of fingers" (col. 4 lines 16-17) such as three fingers 17, 18, 19; and using the installation tool to install the studs in the holes wherein the fingers are inserted in the hole, the stud is moved through the bore 20 of a sleeve 25 using plunger 22 such that the stud is pressed against the shoulders of the fingers to force the fingers radially outward when the stud flange 13 is sliding along the fingers into its bottom position in the hole between the end portions of the fingers; maintaining the plunger in contact with the stud and simultaneously withdrawing the fingers from the hole so that the plunger prevents withdrawal of the stud from the hole. As shown in figures 3-5, the fingers have narrowing tip portions. Pettersson states "... positioning a spike [stud] between the fingers and within the hole. Finally, the fingers are withdrawn from the hole, permitting the wall of the hole to contract to its original shape and thereby firmly grip the spike to safely anchor the same in a correct position" (col. 1 lines 56-60). Hence, Pettersson teaches positioning the stud using the fingers and maintaining the position of the stud using material of the tread. Pettersson substantially discloses (1) the claimed

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combination of tire and studs and tool and (2) the claimed method of installing studs.

Pettersson does not recite the stud having a bottom flange with *the claimed shape*.

Ostrovskis discloses a stud 1 for a motor vehicle tire comprising a bottom flange 2, a neck 3, a bowl 4 and a tip 5. See figure 1. The cross-sectional shape of the root (bottom flange 2) is out of round. The out of round shape may for example be oval or rounded rectangle. The cross-sectional shape of the upper part (tip 5, bowl 4) is also out of round. The longitudinal axis of the out or round root (flange) and the longitudinal axis of the upper part enclose an angle of for example 65-115 degrees. Ostrovskis teaches that the out of round bottom flange of the stud can be oriented in the tread such that tilting of the stud in the rubber under load conditions is reduced so as to reduce heating and aging of the tread rubber. Ostrovskis also discloses orienting the out of round tip in the tread so as to shorten braking distance and reduce traction. For installation of the stud in a tread, Ostrovskis teaches guiding the stud to the tread using a pipe (tube) having a cross section corresponding to the cross section of the stud so that the stud can be seated in the tread at the proper angular position.

Russia discloses a tire studding device comprising a charging tube, guide tube 11, lips 14 (fingers) for widening a hole in the tread of the tire, a pusher 16 with drive to insert an anti-skid stud into the widened hole and a drive starter wherein the charging tube and guide tube 11 are provided with guide members for orientation of the antiskid stud. The section profile of the tubes (e.g. 11) meets the section profile of the anti-skid stud. See abstract and figures. The stud comprises a tip 5, body 1, and bottom flange 2. See figures 11 and 12. The stud may have a generally triangular cross-sectional

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shape (figure 11) or a generally rectangular cross sectional shape (figure 3). When installing a stud having a generally triangular cross section, Russia shows using three pushers 16 - one pusher for each side of the bottom flange. See figure 19.

As to claims 1, 16, 38 and 39, it would have been obvious to one of ordinary skill in the art to use "non-round" tire studs in Pettersson's process for installing studs in premade holes in a tire tread since (1) Ostrovskis, also disclosing a stud for a tire tread having a bottom flange, neck, top bowl and tip, suggests using out of round crosssectional shape (e.g. oval, rounded rectangle) for the tip and bottom flange of a stud to improve braking and traction of the tire and to prevent tilting of the stud to reduce heating and aging of the tread rubber and/or (2) Russia teaches inserting "out of round" studs into premade holes in a tire tread using an apparatus similar to that of Pettersson. One of ordinary skill in the art would have had a reasonable expectation of success using Pettersson's stud installation tool to install out of round studs into premade holes. Pettersson and Ostrovskis both guide a stud through a tube toward the tread. Pettersson and Russia both guide a stud through a tube toward a tread with Russia additionally teaching installing out of round stude into premade holes using a stud installation tool similar to that of Pettersson. Ostrovskis and/or Russia motivate one of ordinary skill in the art to use "non-round" tire studs in Pettersson's process for installing studs in premade holes in a tread. Ostrovskis for example motivates one of ordinary skill in the art to use non-round studs to improve braking and traction of the tire and to prevent tilting of the stud to reduce heating and aging of tread rubber.

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As to claim 1: With respect to the number of first side portions and second side portions, the out of round cross-sectional shape (e.g. oval stud) suggested by Ostrovskis has two first side portions at a short distance from the stud center and two second side portions at a greater distance from the stud center. Alternatively, the out of round cross-sectional shape (e.g. generally rectangular stud) suggested by Russia has two first side portions at a short distance from the stud center and two second side portions at a greater distance from the stud center. Furthermore, it would have been obvious to one of ordinary skill in the art to use four fingers in Pettersson's stud installation tool in view of (1) Pettersson's teaching to use "a number of fingers" such as "three radially movable jaw fingers 17, 18, 19" in order to expand the wall of the hole into which the stud is inserted and optionally (2) Russia's suggestion to associate a pusher 16 / lip 14 for each side of an out of round stud (see figures 15-19). With respect to the fingers being in contact with at least two first side portions, Pettersson teaches pressing the bottom flange of the stud against the fingers so that the fingers expand. The use of four fingers instead of three fingers is amply suggested by Pettersson's teaching to use a number of fingers such as three. Pettersson is not limited to using only three fingers. One of ordinary skill in the art would readily appreciate from Pettersson's disclosure to use fingers to expand the hole for the stud that the use of more than three fingers would facilitate expansion of the hole for the stud. The subject matter of the number of jaw fingers being equal to twice the number of second side portions of the stud and two jaw fingers being in contact with two first side portions of the stud is suggested by (A) Pettersson's teaching to contact the bottom

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flange of a stud with a number of fingers and (B) the out of round cross-sectional shaped bottom flange of the stud suggested by Ostrovskis and/or Russia. This is especially true in view of the teaching in Russia to associate a pusher 16 / lip 14 for each side of an out of round stud as suggested by figures 15-19.

As to claim 16: With respect to the number of first side portions and edge portions, the out of round cross-sectional shape (e.g. rounded rectangle) suggested by Ostrovskis has four side portions at a short distance from the stud center and four edge portions (rounded corners) at a greater distance from the stud center. Alternatively, the out of round cross-sectional shape (e.g. generally triangular) suggested by Ostrovskis has three first side portions at a short distance from the stud center and three edge portions (corners) at a greater distance from the stud center. It would have been obvious to one of ordinary skill in the art to use a number of fingers in Pettersson's stud installation tool equal to the number of edge portions in view of (1) Pettersson's teaching to use "a number of fingers" such as "three radially movable jaw fingers 17, 18, 19" in order to expand the wall of the hole into which the stud is inserted and optionally (2) Russia's suggestion to use three pushers 16 / lips 14 for a generally triangular stud having three sides and three edge portions - i.e. associate a pusher 16 / lip 14 for each side of an out of round stud (see figures 15-19). With respect to the fingers being in contact with at least two side portions, Pettersson teaches pressing the bottom flange of the stud against the fingers so that the fingers expand.

As to <u>claims 38, 39 and 42</u>: With respect to oval or polygonal bottom flange, note the suggestion from Ostrovskis and/or Russia to use an out of round cross sectional

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shape; it being noted that Ostrovskis teaches using an out of round shape with straight sides (rounded rectangle) as an alternative to an out of round shape with only curved sides (oval). As to claims 38 and 42, it would have been obvious to one of ordinary skill in the art to turn Pettersson's stud installation tool such that the fingers are turned as claimed since (1) Pettersson teaches moving the stud through the guide bore of a sleeve 25 and using the fingers to correctly position the stud and (2) Ostrovskis and/or Russia suggest turning a guide tube through which out of round studs are moved so that the out of round studs can be disposed in the tread of a tire at a desired orientation. The hard tip in the stud of each of Pettersson, Ostrovskis and Russia is in a constant position with respect to the bottom flange. As to using "cermet" for the hard tip, it would have been obvious to use cermet (e.g. sintered carbide) for the hard tip of the stud as claimed since it is taken as well known / conventional in the tire stud art to use "cermet" (e.g. carbide) for the tip of a tire stud (the cermet material secured in the stud by extending the cermet material a desired length through the body of the stud) so that the remainder of the tire stud can be made of a different material. The claimed non round shape of the tip is suggested by Ostrovskis and/or Russia. As to claim 39, it would have been obvious to one of ordinary skill in the art to use Pettersson's stud installation tool to install two types of stude as claimed in view of Ostrovskis's teaching that different types of studs may be installed in the tire to obtain optimal force absorption in both straight ahead driving and curved travel to the left or the right. Ostroviskis and/or Russia suggests turning the tube having a guide bore to orient an out of round stud. Also, none of the claims requires orientation of the stude using jaw fingers without the

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need for a guide bore or injection pipe. The fingers in Pettersson orient the stud since Pettersson teaches sliding the stud along the fingers to the correct position.

With respect to the subject matter of the jaw fingers each comprising a base portion and a tip portion with the base portions defining a stud receiving area there between and the tip portions defining a stud orienting area there between, the stud being oriented in any of a plurality of orientations when positioned within the stud receiving area, and as the stud penetrates the stud orienting area, the tip portions of the jaw fingers orient the stud from one of the plurality of orientations into the predetermined stud orientation, the following comments are made: First: The tips of Pettersson's fingers define a "stud orienting area". Second: The "vertical" orientation of Pettersson's studs when between the fingers and in the hole of the tire tread is different from the "inclined" orientation of the studs at the junction of the feeder channel 21 and the bore of the sleeve 25 wherein this junction is at a "stud receiving area" defined by base portions of the fingers. Alternatively, the description of "any of a plurality of orientations" reads on slight variations of orientation of the stud centerline and the centerline of the bore of sleeve 25. Note Ostrovskis' discussion of "slight play" and figure 18 of Russia. More importantly: Note the 112 first paragraph rejections. It appears that the 112 first paragraph rejection can only be overcome by deleting the subject matter of "the jaw fingers each comprising a base portion and a tip portion with the base portions defining a stud receiving area there between and the tip portions defining a stud orienting area there between, the stud being oriented in any of a plurality of orientations when positioned within the stud receiving area, and as the stud penetrates the stud orienting

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area, the tip portions of the jaw fingers orient the stud from one of the plurality of orientations into the predetermined stud orientation".

As to claim 2 (four fingers), see comments on claim 1.

As to claims 3 and 4, Ostrovskis suggests an oval shaped bottom flange.

As to claim 5, it would have been obvious to use hard cermet (e.g. sintered carbide) for the tip of the stud as claimed since it is taken as well known / conventional in the tire stud art to use "cermet" (e.g. carbide) for the tip of a tire stud (the cermet material secured in the stud by extending the cermet material a desired length through the body of the stud) so that the remainder of the tire stud can be made of a different material. The claimed non round shape of the tip is suggested by Ostrovskis and/or Russia.

As to claim 6, Ostrovskis suggests orienting a non-round tip at an angle to the non-round flange.

As to claim 8, Pettersson suggests a circular premade hole. Russia also suggests using a premade hole.

As to claims 9-14 and 40, the claimed fingers read on Pettersson's fingers.

As to claim 15, see shape of bottom surface of the bottom flange in figures 1, 3, 4 of Pettersson. In any event: it would have been obvious to provide the bottom flange of the stud with a bevel as claimed since it is taken as well known / conventional per se in the tire stud art to provide the bottom flange of a tire stud with a bevel in order to facilitate insertion.

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As to claims 17-22, note the non-round cross-sectional shape for the bottom flange and the non-round cross-sectional shape for the tip suggested by Ostrovskis and/or Russia. As to claim 21, note comments on claim 5.

As to claim 30, Pettersson suggests a circular premade hole. Russia also suggests using a premade hole.

As to claims 31-36 and 41, the claimed fingers read on Pettersson's fingers.

As to claim 37, see shape of bottom surface of bottom flange in figures 1, 3, 4 of Pettersson. In any event: it would have been obvious to provide the flange of the stud with a bevel as claimed since it is taken as well known / conventional per se in the tire stud art to provide the bottom flange of the tire stud with a bevel in order to facilitate insertion.

9) Claims 7-8 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettersson in view of at least one of Ostrovskis and Russia as applied above and further in view of Eromaki (US 6374886).

As to claims 7-8 and 29-30, it would have been obvious to one of ordinary skill in the art to provide the premade hole with a bottom expansion / at least partly circular expansion as claimed in view of the suggestion from Eromaki, also directed to the tire stud art, to provide an at least partly circular premade hole in which a non-round stud is inserted with a bottom expansion.

10) Claims 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettersson in view of at least one of Ostrovskis and Russia as applied above and further in view of Finland 9/65 or Japan 407 (JP 56-146407).

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It would have been obvious to one of ordinary skill in the art to provide the tire stud with the claimed features as set forth in claims 23-28 in view of (1) the suggestion from Ostrovskis and/or Russia to use a non-round shape for the tip of the tire stud and (2) the specific non-round shape for the upper portion of a tire stud shown by Finland 9/65 (figure 2) or Japan 407 (figure 5).

## Remarks

11) Applicant's arguments with respect to claims 1-42 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 1-29-07 have been fully considered but they are not persuasive.

With respect to applicant's arguement that Pettersson teaches only one crosssectional shape of the stud, examiner emphasizes that the secondary art to at least one of Ostrovskis and Russia provide ample suggestion to use out of round studs for a tire tread.

Applicant argues that use of jaw fingers would be discouraged from use in installing studs in an unvulcanized tread as disclosed by Ostrovskis. This argument is not persuasive since Pettersson teaches using jaw fingers to install studs in holes of a vulcanized tread and Ostrovskis suggests using an out of round shape instead of a round shape for studs.

- 12) No claim is allowed.
- 13) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. Fri. 8:30 AM 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven D. Maki April 14, 2007

STEVEN D. WANG

PRIMARY EXAMINER